



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/671,800	09/28/2000	Bulent M. Basol	2022/48819	7925
7590	09/08/2004		EXAMINER	
Crowell & Morning LLP Intellectual Property Group P.O Box 14300 Washington, DC 20044-4300			LEADER, WILLIAM T	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/671,800	BASOL ET AL.	
	Examiner	Art Unit	
	William T. Leader	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 June 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 93 and 95-101 is/are pending in the application.
 - 4a) Of the above claim(s) 97-99 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 93, 95, 96, 100, 101 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

1. Receipt of the papers filed on June 16, 2004, is acknowledged. Claims 93 and 95-101 are pending. Claims 97-99 remain withdrawn from consideration.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 93, 95, 96, 100 and 101 are rejected under 35 U.S.C. 102(e) as being anticipated by Mayer et al (6,315,883), for the reasons given in the previous office action and in view of the following comments.
4. Claims 93, 95, 96, 100 and 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayer et al (6,315,883) for the reasons given in the previous office action and in view of the following comments.
5. Applicant's arguments have been carefully considered but are not deemed to be persuasive. Applicant points out that Mayer et al identify limitations of the current art to fill low aspect ratio features and concludes that the calculation of Mayer et al would not hold for the case of large cavities. While applicant's observation with respect to Mayer et al is correct, it is not seen as invalidating the rejection of record. Instant claim 93 recites a planar conductive layer with a

predetermined thickness range of the planar conductive layer over the surface portion that is between one tenth and one half of the thickness of the planar conductive layer within the cavity portion. Applicant's claim language is not seen as requiring that the thickness of the conductive layer be *uniform* throughout the entire cavity portion which includes the first cavity and the second cavity. The first and second cavities may have different depths. As written, applicant's claim language is considered to encompass the geometry disclosed by Mayer et al where the depth of filling (layer thickness) in cavities of different sizes may be different. The equations given by Mayer et al and referred to in the previous office action are considered to accurately describe the surface of an article. Applicant's claims are considered to read on this article.

6. It is additionally noted that if the top of the as-deposited layer is non-planar, as planarization is carried out the layer on the surface is reduced in thickness until it is removed. This is illustrated in figures 5-8 of Mayer et al. As the initially thick layer is removed, a point will be reached when the thickness of the layer over the surface portion is between one tenth and one half of the thickness of the planar conductive layer within the cavity portion. This structure falls within the scope of applicant's claims.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William T. Leader whose telephone number is 571-272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WJ
William Leader
August 30, 2004

ROY KING R
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700